June 5, 2014

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JUN - 5 2014

Dept. of Building Inspections
City of Portland Maine

Ms. Tammy Munson
Inspections Division
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

Subject: The Forefront at Thompson's Point
Depot Building- Building Application

Dear Tammy:

On behalf of Forefront Partners I, LP, we are pleased to provide the accompanying package of materials in response to a question raised by Marge Schmuckal's review of our special event plans submitted on April 7, 2014. As a result of her zoning and codes review, Ms. Schmuckal questioned whether the sound levels at the closest residential neighborhood would meet the specified requirements in the B-5 Zone. We would like to address these concerns with three pieces of information.

First, we would like to refer to a letter prepared by Chris Thompson (the applicant) to Bill Needelman, Senior Planner at the time dated January 22, 2013. The letter summarizes how, based on computations completed by Moonlighting Production Services, LLC, the development will meet the noise standards of the B-5 Zone. It is noted that this letter was prepared in reference to the previously approved Level III Site Plan dated June 2013 but feel it is still applicable to this analysis. The 2013 approved Site Plan proposed a stage in the approximate location of the existing Brick South building located approximately 540 feet north of the proposed stage shown in our current application package. The approximate location of the proposed stage is now located an additional 485 feet further from the residential neighborhood at the end of Powsland Street which is considered to be the threshold for decibel (dba) levels cited in the Zoning ordinance. For ease of reference, this letter is enclosed in Exhibit A.

Second, Nick Pires of Moonlighting Productions Services LLC has recalculated the projected noise levels at a distance of 1930 feet from the stage to the residential neighborhood using the same basis of analysis as those completed in 2013. This memorandum is enclosed in Exhibit B.

Lastly, our office has a prepared a graphical figure depicting the proposed distances to the residential neighborhood from the previously approved stage location and the new stage location. Based on this figure, it is easy to deduce that our noise levels from the new stage location will have to travel a greater distance to the residential area and therefore be lower than previously contemplated. Figure 1 – Local Map is enclosed in Exhibit C.

I trust this information will satisfy Ms. Schmuckal's concerns regarding noise levels. Pursuant to your instructions to submit all documents regarding this application directly to you, we have not submitted this document through the electronic submission system. Hard copies and/or an electronic submission are available upon request.

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FAY, SPOFFORD & THORNDIKE
Offices in: Massachusetts, New Hampshire, Maine, Connecticut and New York

If you have any questions regarding these materials, please contact this office.

Sincerely,

FAY, SPOFFORD & THORNDIKE, LLC

Bo Kennedy, P.E., C.P.E.S.C.
Engineer

BEK/cmd

Attachments

c: Chris Thompson, Forefront Partners I, LP
Jed Troubh, Forefront Partners, I, LP
Christine Grimando, City of Portland
Jeff Levine, City of Portland
Marge Schmuckal, City of Portland
Barbara Barhydt, City of Portland

R:\2982.05 Amended Site Plan Part II\Admin\Permitting\Building Permit - Depot Building April 204\LOR #1\2014.06.05 Munson (addl material).doc

EXHIBIT A

JANUARY 22, 2013 LETTER TO BILL NEEDLEMAN

22 January, 2013

William Needelman
Senior Planner
Planning and Development Department
City of Portland, Maine
389 Congress Street
Portland, Maine 04101-3509

RE: Forefront at Thompson's Point
Project ID: #2011-274

Dear Mr. Needelman:

I hope that all is well with you.

Pursuant to the City of Portland Planning Board's letter of June 15, 2012, page 5, Section C Site Plan, Subsection (xiii), which requires that "[p]rior to the issuance of a building permit, the applicant shall submit to the Zoning Authority for review and approval, acoustical information demonstrating adherence to the performance standards of the B-5 zone", I am writing to provide you with detailed acoustical information for your consideration.

The project includes a proposed event center building with associated outdoor concert seating areas. These facilities will provide the opportunity for indoor concerts, outdoor concerts and indoor/outdoor concert productions. Outdoor concerts would be held on a seasonal basis with on the order of one to two weekly concerts expected per concert season. The objective of this review is to examine the proposed concert facilities in relation to the noise standards contained in the City of Portland Land Use Code of Ordinances and to other outdoor concert venues located in the downtown waterfront area of Portland.

The Thompson's Point project is located in the B-5 Urban Commercial Business Zone. The nearest residential uses to the project are located in the R-5 and R-6 zones and are approximately 1,640 feet north and northwest of the proposed event center, respectively. Other surrounding land uses include the Portland Jetport across the Fore River to the west, Interstate 295 which parallels the site to the east, and the Portland Transportation Center (bus and train stations) to the north.

These surrounding land uses are all significant transportation noise sources and the aircraft noise from the Portland Jetport is analyzed at periodic intervals in accordance with Federal Aviation Regulation Part 150.

Section 14-230.5 of the Land Use Code establishes performance standards for the B-5 zone including noise standards as set forth in subsection (b) Noise. These performance standards are as follows:

3. *Maximum permissible sound levels*: The maximum permissible sound level of any continuous, regular or frequent source of sound produced by an activity shall be as follows:

   a. Sixty (60) dBA between the hours of 7:00 a.m. and 10:00 p.m.
   b. Fifty (50) dBA between the hours of 10:00 p.m. and 7:00 a.m., as measured at or within the boundaries of any residential zone.

   In addition to the sound level standards established above, all uses located within this zone shall employ best practicable sound abatement techniques to prevent tonal sounds and impulse sounds or, if such tonal and impulse sounds cannot be prevented, to minimize the impact of such sounds in residential zones.

Notable exemptions to these permissible sound levels are listed in subsection (b) 4 and include:

ii. Traffic noise on public roads or noise created by airplanes and railroads; and
v. Noise created by any recreational activities which are permitted by law and for which a license or permit has been granted by the city, including but not limited to parades, sporting events, and fireworks displays.

We have consulted with sound engineers, Moonlighting Production Services, a Portland company that specializes in acoustical design, engineering, operations, and sound level monitoring for indoor and outdoor concerts around the region ranging in size from 50 to 15,000 people.

Their regular clients for concerts and events include:

-Portland Symphony Orchestra
-Portland Ovations
-L.L. Bean Summer In The Park concert series
-Bowdoin College
-Bates College
-University of Southern Maine
-Comedian Bob Marley
-Great Waters Music Festival
-Arts Jubilee
-Stone Mountain Arts Center
-Boothbay Opera House
-North Atlantic Blues Festival

We asked that Moonlighting review in detail our site design, proposed program, and basis of design for the event center and outdoor concert area.

We also consulted with R. Scott Bodwell, P.E., of EnviroAcoustics, who specializes in environmental acoustics and noise control engineering, to look at the relation of the Forefront project to other outdoor concert events in Portland from a comparative perspective.

The proposed event center and outdoor concert area expects to provide a distributed concert-rated sound amplification system that will consist of two sound production assemblies which may be integrated.

One assembly will be for the indoor seating area of the event center and the second assembly will be installed outside the event center to provide concert audio to the outdoor seating area. The north end of the event center or concert hall will feature a large hangar-style door that will allow viewing of the indoor stage from the outdoor spectator area.

One or both arrangements of the distributed amplification system can be used depending on whether the concert is presented indoors, outdoors, or is an indoor/outdoor event. In more traditional fashion, performers will also be able to provide their own sound systems for concert events that are both entirely indoors and outdoors.

The following data is intended to present expected sound pressure levels at various points on and adjacent to the proposed Forefront property resulting from concerts held at the outdoor amphitheater.

The base line for these calculations is concerts with 85dB (A-weighted) measured SPL at the FOH mix position 75' from stage. These measurements are typical for a normal outdoor concert.

The mathematical model used is Inverse Square Law:

20*log(D2/D1)= X where "D1" represents distance from center stage to FOH Mix, "D2" represents distance from center stage to perimeter location and "X" represents the reduction in dBspl from "D1" to "D2".

Using inverse square law calculations one can expect the following resulting SPL in each given location/distance from a concert measuring 85dBA at the FOH mix position:

Location (dist.)	**Resulting SPL**
Railroad Tracks (750')	65.0dBA
Bus/Train Terminal (1050')	62.1dBA
Existing Hotel (1600')	58.4dBA
Sewall Street (1350')	59.9dBA
Fore River Parkway Entrance (1350')	59.9dBA
North End of Parking Lot (1350')	59.9dBA
Nearest Residential Property (1640')	58.3dBA

It is important to note that the use of high-quality sound system, the presence of on-site buildings (notably the parking garage) and off-site buildings such as the transportation center; the sloped knoll at the north end of the outdoor concert venue; and the buffering effect of the landscaping between the outdoor concert area and the property line, will all combine to result in significantly lower "real-world" measurements at each location.

The building that presents the greatest potential for sound reflection is the proposed parking garage to the north of the concert facilities, whose position and orientation will act to reflect sound away from the nearby residential zones and toward other existing noise sources such as the Portland Jetport and Interstate 295.

Further, it is important to note that these landscape and architectural features will also buffer against tonal and impulse sounds to the benefit of the residential properties to the north and northwest.

As a practical matter, sound levels at the FOH mix position could be higher than 85dBA and still result in sound levels at the nearest residential property that do not exceed 60dBA. It is highly likely that the surrounding conditions, such as the Portland Jetport, I-295, and the Portland Transportation Center, create ambient sound that is equal to or in excess of these levels.

Once the Forefront project is built and sound testing is undertaken, we anticipate being able to reliably demonstrate that sound levels at the nearest residential property will be below the 60dBA requirement. For current purposes, based on our consultations with sound professionals, we feel it is reasonable to conclude based on the mathematical model alone that the sound produced by our concerts, assuming they are 85dBA or below at the source, will result in performance that is consistent with the B-5 zoning requirements.

To evaluate the relative sound levels expected from outdoor concerts at the proposed Thompson's Point facilities, we also reviewed the general layouts and the sound survey reports for outdoor concerts at the Ocean Gateway and Maine State Pier. Both of these facilities are located in the downtown waterfront area of the City of Portland.

We used the highest sound levels measured at off-site locations from these reports to evaluate potential sound levels at the closest locations in the R-5 and R-6 zones to the Thompson's Point concert facilities. This review was similarly based on hemispherical sound propagation with no attenuation due to intervening terrain, buildings or vegetation.

Both downtown waterfront concert venues feature long rectangular arrangements that place the limits of spectator areas at greater distances from the concert stage than will occur at the proposed Thompson's Point concert facilities. These longer arrangements require production of more sound power to achieve the desired concert sound levels at all spectator areas. Specifically, the farthest spectator area for outdoor concerts at the proposed Thompson's Point development is anticipated to be approximately 250 feet from the concert stage. This is approximately half the estimated distance from the stage to the farthest spectator areas at the Maine State Pier and Ocean Gateway venues. Consequently, based on sound propagation over distance, the required sound production at Thompson Point can have a power level of 6 dBA less than these venues to achieve the same sound levels at the farthest spectator areas. This will also result in lower off-site sound levels from Thompson's Point when compared to these downtown waterfront venues.

Further, the use of a distributed sound amplification system for indoor/outdoor concerts will also reduce the distance that sound must travel from its source of origin to produce the required performance sound levels.

Although this review indicates that Thompson's Point concert facilities will produce less off-site sound than the downtown waterfront venues, the potential still exists for maximum concert sound levels to exceed the City of Portland 60 dBA daytime sound level limit within the nearby residential zones if the FOH levels were found to be in excess of 85 dBA.

However, it is important to note that this limit applies to "any continuous, regular or frequent source of sound," and by definition may not be applicable to outdoor concerts due to their limited and seasonal time periods, which being (a) seasonal and (b) not daily even during the season in which they occur, are by nature not continuous, regular, nor frequent. Concert events would conceivably qualify for the exemption that applies to "Noise created by any recreational activities which are permitted by law and for which a license or permit has been granted by the city, including but not limited to parades, sporting events, and fireworks displays". While at this stage we fully anticipate compliance with the B-5 zoning requirements, we believe that it is reasonable to characterize seasonal concerts as "recreational activities which are permitted by law," which would suggest that the permitted levels of sound for other venues, namely the Maine State Pier and Ocean Gateway venues, would set a more practicable standard.

Our team recommends monitoring of sound levels from outdoor concert events to ensure that they are consistent with other outdoor concert venues in the City of Portland. Monitoring should be conducted and documented in accordance with generally accepted acoustic standards and locations should include the nearest residential areas within the B-5 and B-6 zones.

In conclusion, we respectfully suggest that the project as designed meets the letter and the intent of the B-5 zone. To this end, we request that the City determine that we have met the requirement that "[p]rior to the issuance of a building permit, the applicant shall submit to the Zoning Authority for review and approval, acoustical information demonstrating adherence to the performance standards of the B-5 zone."

Thank you for your consideration.

Yours sincerely,

Chris Thompson

EXHIBIT B

JUNE 6, 2014 MEMORANDUM PREPARED BY MOONLIGHTING PRODUCTION SERVICES, LLC

Moonlighting Production Services LLC

470 Riverside Street Portland, ME 04103

Phone: 207-878-1990 Fax: 207-878-1986 Email: nick@moonlightingproduction.com

Date: June 5, 2014

To: Chris Thompson
Forefront Partners

Re: Forefront Concert Venue Sound Pressure Levels

The following data is intended to present expected sound pressure levels at the nearest residential property adjacent to the proposed Forefront development resulting from concerts held at the outdoor amphitheater. Significant variables (including, but not limited to) stage placement, venue acoustics, weather conditions (wind, temperature, humidity) and temperature gradients, are <u>not</u> factored into these equations.
The base line for this calculation is a concert with an 85dB (A-weighted) measured SPL at the FOH mix position, 75' from stage. This measurement would not be atypical for an outdoor concert. The mathematical model used is Inverse Square Law for sound pressure level (SPL):

$20*\log(D2/D1)= X$ where "D1" represents distance from center stage to FOH Mix, "D2" represents distance from center stage to adjacent property and "X" represents the reduction in dBSPL from "D1" to "D2".

Using inverse square law calculations, one can expect the following resulting SPL at the nearest residential property line from a concert measuring 85dBA at the expected FOH mix position:

Location (dist.)	**Resulting SPL**
Nearest Residential Property (1930')	56.8 dBA

**Attention to sound system, architectural and landscape design will likely result in significantly lower "real-world" measurements at each location.

EXHIBIT C

FIGURE 1 – LOCAL MAP